Reproducibility in science: How video journals increase research validity and productivity

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Journal of Visualized Experiments, USA

Several high-impact studies indicate that an astoundingly low 11-30% of published scientific research is reproducible. The media has implied that scientists are actively practicing poor conduct and falsifying data under the pressure of career considerations. We reject this speculation and instead question the traditional, text-based format of scientific communication. As research methods incorporate new technologies and become increasingly complex, the platform for sharing new techniques remains relatively unchanged. Researchers currently present their dynamic methods as static snapshots manipulated to fit within the limitations of text-based journals. A new generation of science journals is changing that - it employs video technology to capture and share complex research techniques in a dynamic format. Here, we present an overview of the growing field of video publication and discuss its technical challenges, implications for scholarly communication and its adoption by the scientific community. Results from recently conducted case studies will be shared, such as the experiences of research groups at Purdue University and University of Alaska which indicate that video publications can save a lab up to $15,000 per experiment.

Biography
Kira M Henderson has completed her PhD at the age of 23 years from Rensselaer Polytechnic Institute. She is the Deputy Director of Journal Development at JoVE, the Journal of Visualized Experiments, a leading peer-reviewed scientific methods journal devoted to increasing the reproducibility of research through visualization. She has presented her work at more than 20 conferences and university seminars around the globe, including Gordon Conferences and international symposia.

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